Defense Threat Reduction Agency Supports DAU Coursework

WMD Simulation Incorporated into DoD Advanced Systems Engineering Course

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Beginning this fiscal year, the Defense Threat Reduction Agency (DTRA) began a new era of cooperation within the DoD professional education community. DTRA is now partnering with the Defense Acquisition University (DAU) to introduce senior DoD technical managers to DTRA Modeling and Simulation (M&S) capabilities as part of a formal, ongoing course presented at the Capital and Northeast Region, located at Ft. Belvoir, Va.

The Capital and Northeast Region is a campus of the Defense Acquisition University (DAU), a corporate university aligned under the Director, Defense Procurement and Acquisition Policy, Office of the Under Secretary of Defense for Acquisition, Technology and Logistics (AT&L). This course is routinely offered six times a year in the Washington metropolitan area and 50 times across the country.

The Under Secretary of Defense (AT&L) and the military services have increased their emphasis on the use of simulation in support of DoD acquisition activities. In support of these goals, DAU offers a four-hour simulation block in its senior Advanced Systems Planning, Research, Development, and Engineering Course for the DoD (AT&L) workforce.

Because of this increased emphasis on using simulation in support of DoD acquisition activities, DTRA's Weapons of Mass Destruction (WMD) Assessment and Analysis Branch expressed an interest in supporting the four-hour session. To this end, DTRA collaborated with Professor Randy Zittel, DAU Technology and Engineering Department, who is also the author for much of DAU's M&S curriculum.

Donald Warf (2nd from right), and Edward Pelczar (2nd from left), Cubic Applications, Inc., demonstrate WALTS/IMPACT simulation to DAU students.

"*Hands-on* exposure to current simulation technology," Zittel stated, "goes far beyond what any in-classroom discussion can accomplish by allowing senior technical managers—who may not be currently involved in state-of-the-art techniques and practices within the systems planning, research, development and engineering career field—access to simulation experts. Such exposure also helps validate the value of simulations being used in so many DoD applications."

On Oct. 3, 2002, 38 students—predominantly federal civilians, GS-14 and above, and military officers, major (O-4) and above—attended the first DTRA session. The four-hour session took place in the Technical Engineering Support Center at the DTRA Telegraph Road site

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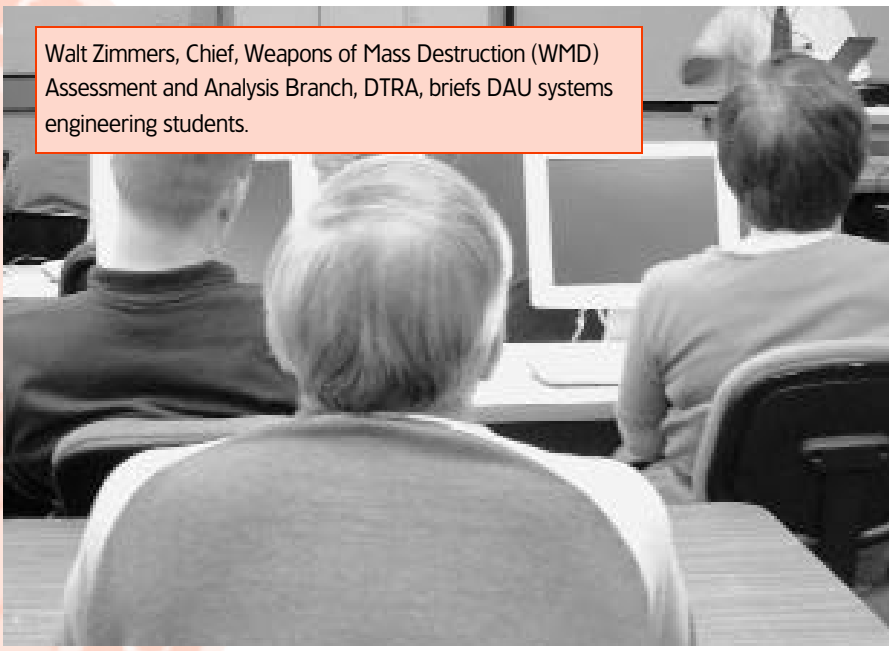
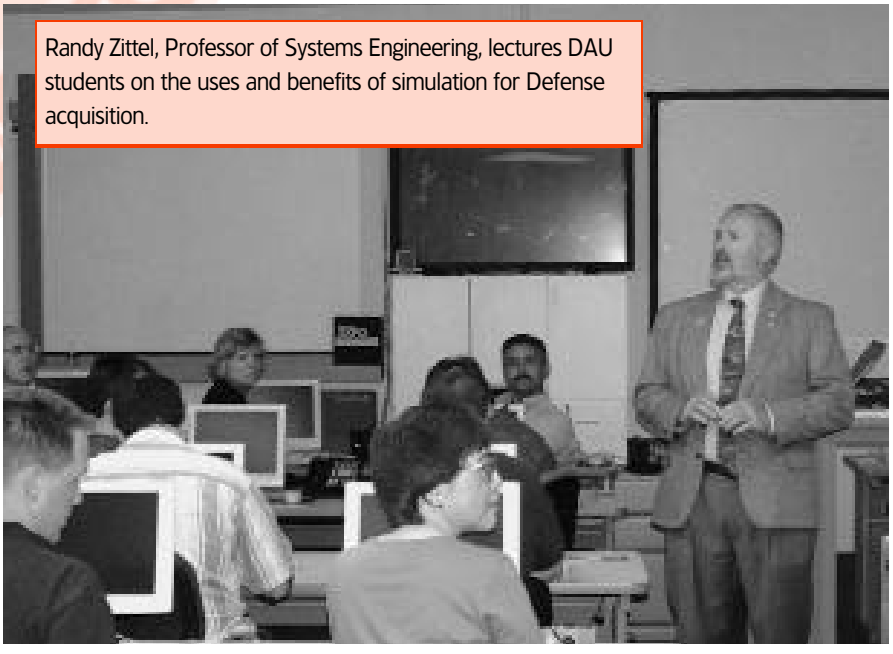
Photos by Mike Dawson, Cubic Applications, Inc.



Walt Zimmers, Chief, Weapons of Mass Destruction (WMD) Assessment and Analysis Branch, DTRA, briefs DAU systems engineering students.



Randy Zittel, Professor of Systems Engineering, lectures DAU students on the uses and benefits of simulation for Defense acquisition.

in Alexandria, Va. Two hours of lecture by Zittel followed a welcome and introductory overview by Walt Zimmers, Chief of the WMD Assessment and Analysis Center.

During his presentation, Zimmers provided an introduction to DTRA M&S capabilities and plans; insight into the uses of M&S throughout the DoD; and cooperative M&S activities with other agencies and activities such as support for Homeland Defense.

Following Zittel's lecture, the class was divided into groups and given demonstrations of DTRA's simulation Research and Development (R&D) resources at the adjacent R&D facility. The East Coast Engineering Division of Cubic Applications, Inc., operates the facility for DTRA and also hosts some of the agency's premier M&S development capabilities.

Engineers from Cubic Applications Inc., demonstrated ongoing DTRA M&S projects, supporting DoD simulations, engineering tools, and the development environment and platforms.

Students observed a demonstration of the Weapons Analysis and Lethality Tool Set/Integrated Modeling Platform for Advanced Computational Technologies (WALTS/IMPACT), conducted by Cubic engineers Donald Warf and Edward Pelczar. WALTS/IMPACT is an ongoing DTRA effort that integrates physics-based weapons effects with environmental data to show realistic battle-damage outcomes to the warfighter.

The demonstrations highlighted current efforts aimed at improving DTRA's ability to rapidly construct target environments for its M&S programs. David Holland, also of Cubic, presented the Constructive Rapid Assessment Modeling tool used for rapid target generation.

Cubic's Mike Walsh showed students how terrain databases were integrated into the modeling effort; Rob Eddy, also of Cubic, covered the uses of Computer Assisted Design tools to build realistic targets. Cubic engineer Cecil Maccannon Jr. provided additional insight and answered questions raised during the tours.

An aspect of the facility that is critical to interactive simulation development is the incorporation of other military simulations. Cubic's Conan Smith demonstrated the Simulation Training and Analysis for Fixed Facilities/Sites (STAFFS)—a simulation developed by the Air Force Research Laboratory. The STAFFS model is used with DTRA models to assess fixed-site performance under chemical and biological warfare conditions.

After the demonstrations, students returned to the classroom for additional presentations and a wrap-up period. According to Zittel, he received "overwhelming feedback on how great the information was" and how helpful it was to see the simulations "operate live" in the first session. Five additional demonstrations are scheduled through August 2003.

Editor's Note: The authors welcome questions or comments on this article. Contact them at jneasham@cubic.com; wmagill@cubic.com; and randy.zittel@dau.mil.